

QUIESCE TERMINATION/SUSPENSION  
IN A MULTITHREADED ENVIRONMENT

Abstract

5       A method of coordinating the quiescing of the  
additional threads of a multithreaded application to  
facilitate the handling of an external event by a first  
thread without interference from the additional threads. In  
response to the detection of an external event by the first  
thread, the first thread sends a quiesce event to each  
10       additional thread of the application and suspends execution.  
The quiesce event may be either a suspension event  
requesting suspension of the additional threads or a  
termination event requesting termination of the additional  
threads. Each additional thread, upon receiving the quiesce  
15       event, checks its environment to determine whether it is  
holding any critical system resource. If the additional  
thread determines that is not holding any critical system  
resource and that it is therefore safe to quiesce, the  
additional thread quiesces. Before quiescing, the last  
20       additional thread to quiesce resumes the first thread, which  
is now free to perform critical operations without  
interference from the additional threads. If the quiesce  
type is suspension, the first thread resumes the additional  
threads upon completing its critical operations, whereupon  
25       the application resumes its normal operation.